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NEW FERN RECORDS FOR AUSTRALIA

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Summary

Three species and one variety of fern, *Ctenopteris repandula* Kunz, *Dicranopteris linearis* var. *altissima* Holttum, *Gleichenia milnei* Baker and *Ophioglossum intermedium* J.D. Hook. are recorded from Australia for the first time. In addition *Asplenium unilaterale* Lam. is confirmed as occurring in Australia and the status of *Ophioglossum lineare* Schlecter & Brause as a distinct taxon is upheld.

This paper records new fern taxa which have been discovered in the course of studies on the pteridophytes of tropical Australia.

ASPLENIACEAE

Asplenium unilaterale Lam. in Lam. & Poiret, Encycl. 2: 305 (1786)

The first confirmed Australian specimens of *A. unilaterale* were collected on the Atherton Tableland by Chinnock and Brownsey in October 1982. The species has been included in the Australian flora (e.g. Andrews, in press) but confirmatory specimens have been lacking. Early records of the species by Maiden & Betche were based on misidentified specimens collected by R.F. Waller in Evelyn Scrub near Herberton in 1908 (Andrews, in press).

A. unilaterale is widely distributed from tropical Africa to Asia, China, Japan, Polynesia and New Guinea. Its collection in Australia was to be anticipated. In Australia the species is so far know only from a single locality in a deep rainforest gully growing in orange basalt clay loam and larva-ash just above a stream. The species can be distinguished from other Australian species of *Asplenium* by the pinnae being all nearly equal in size and with the basiscopic margin of each reduced to a small wing.

Queensland. Cook District: Reserve 784, Parish of Bartle Frere, Topaz Rd, 17°24′S, 145°42′E, 700 m, Oct 1982, *Chinnock* 5737 & *Brownsey* (AD, BRI), 21 Sep, 1983, *Gray* 3244 (QRS) & *Jones* 1260 (BRI).

GLEICHENIACEAE

Gleichenia milnei Baker, Syn. Fil. 449 (1874)

Fertile specimens of this species were collected during the Australian Orchid Foundation expedition to northern Cape York Peninsula in September 1983. Plants were growing in shallow clay-loam in open forest close to riverine rainforest.

The material agrees well with descriptions in Flora Malesiana (Holttum 1959), and Holttum has confirmed the identification (pers. comm.). The species is known from the Celebes, Moluccas, Admiralty Islands, Soloman Islands, Vanuatu and New Guinea. This is the first record from Australia. It belongs to the subgenus *Mertensia* and can be distinguished from other Australian species of *Gleichenia* by the stipule-like dissected leaflets present at the branchings of the main rachis.

Queensland. Cook District: banks of Hann Ck, 35 km E of Moreton Telegraph Station, 12°28′S, 142°55′E, 100 m, Sep 1983, *Jones* 1198, *Gray & Collins* (BRI, QRS, K).

Dicranopteris linearis var. **altissima** Holttum, Reinwardtia 4: 276 (1957)

Among specimens of *Dicranopteris linearis* (N. Burman)Underw. var. *linearis* at the Queensland Herbarium, is a collection which is referable to *D. linearis* var. *altissima* Holttum. This widespread variety (Malay Peninsula, Philippines, Moluccas, Soloman Islands and New Guinea) has not previously been recorded from Australia.

Plants have a tall climbing habit (to 6 m or more) with a pair of supra-axillary accessory branches on all forks in the main rachis. Plants of this variety have been recorded as occurring on forest margins at low altitudes.

Queensland. COOK DISTRICT: *ca* 16 km NNW of Daintree, 16°03′S, 145°13′E, Nov 1967, *Boyland* 420 *& Gillieatt* (BRI).

Dicranopteris linearis is in need of further investigation in Australia. Holttum (1959) records 13 varieties for Malesia. Three varieties have now been recorded in Australia but considerable variation exists in var. *linearis* particularly with respect to the morphology and persistence of hairs and the degree of glaucousness of the undersurface of fronds.

Key to the varieties found in Australia

1. Accessory branches always present at ultimate forks, the branches set 3–6 mm above the fork (high climbing fern to 6 m tall) . . . . var. **altissima**
   Accessory branches usually absent from ultimate forks, if present then situated at or just below the junction (ferns to 3 m tall) 2
2. Hairs persistent on lower surfaces of veins . . . . var. **subferruginea** (Hieron.)Nakai
   Hairs not present on lower surface of veins . . . . var. **linearis**

GRAMMITIDACEAE

Ctenopteris repandula Kunz, Syst. Verz. 37 (1854)

Plants of this species have been collected on three occasions from highland areas of the Atherton Tableland. In each case the plants were growing among moss on large, sheltered boulders. Specimens were identified by Barbara Parris of Kew.

The species was described from material collected in Sri Lanka (Sledge 1960) and is relatively common in New Guinea (Parris pers. comm., Copeland 1952). This is the first record from Australia. It can be distinguished from other Australian species by its relatively large naked sori and the repand segments with hairy margins.

Queensland. COOK DISTRICT: State Forest Reserve 194, Parish of Western, 17°18′S, 145°26′E, 1200 m, Aug 1981, *Jones* 27 *& Gray* (BRI, QRS, K), July 1983, *Jones* 1170 *& Gray* (BRI); Sluice Ck, Portion 36, Parish of Ravenshoe, 17°33′S, 145°32′E, 1100 m, July 1983, Jones 1061, *Gray & Lockyer* (BRI).

OPHIOGLOSSACEAE

Ophioglossum intermedium J.D. Hook., Ic. Pl. 10, t. 995 (1854)

Unidentified *Ophioglossum* specimens at the Darwin Herbarium (DNA) included two sheets of *O. intermedium.* Field collections by the senior author have extended the range to five more localities. These are the first records of this species from Australia. It is also known from Central Sumatra, West Java, North and West Borneo and the Philippines (Wieffering 1964).

O. intermedium is in the subgenus *Ophioderma* and is readily recognised by the fertile part being attached peltately to the tropophyll, one third to one quarter from its base. Also the common stalk gradually expands into the tropophyll so that the demarcation between the two is not clear cut as it is in all other Australian terrestrial species of *Ophioglossum.*

In Australia, *O. intermedium* is restricted to northern parts of the Northern Territory. It grows among roots in accumulations of leaf litter in dense rainforest. Its occurrence in north-eastern Queensland is to be anticipated.

Northern Territory. DARWIN AND GULF DISTRICT: Adelaide River, Daly River Rd, 13°30′S, 131°33′E, Jul 1982, *Rankin* 2610 (DNA); Melville Is., Jump-up Jungle, 11°31′S, 130°22′E, Nov 1983, *Dunlop* 6548 (DNA); Feb 1984, *Jones* 1310 (DNA); Melville Island, Hanguana Jungle, 11°32′S, 130°42′E, March 1984, *Jones* 1317 (DNA, BRI); 3 km SE of Jim Jim Falls, Arnhem Land, 12°19′S, 132°52′E, March 1984, *Jones* 1515 (DNA); Melville Island, 10 km from 3 ways, Garden Point rd, 11°33′S, 130°43′E, Dec 1984, *Jones* 1665 (DNA, BRI); Melville Island, Imanawati, 11°33′S, 130°32′E, Dec 1984, *Jones* 1679 (DNA).

Ophioglossum lineare Schlecter & Brause, in Engl. Bot. Jarb. 49: 59 (1912)

This species has proved to be common in parts of Arnhem Land. It is a remarkable simple fern and some authors have suggested that it may be a sporadic leafless development of either *O. gramineum* Willd. or *O. lusitanicum* L. (Lee 1944, Andrews in press). The species was described from New Ireland material and prior to the Northern Territory collections, the only Australian material was a few specimens gathered from near Ravenshoe, north Queensland in March 1943 (Lee 1944).

The local abundance of the species in parts of Arnhem Land enabled a comprehensive study to be carried out. The species is characterized by a tropophyll reduced to a linear appendage 1–2 mm long. The colonies studied in Arnhem Land showed a remarkable degree of uniformity and there is little doubt about the distinctiveness of the taxon. Reduced forms of *O. gramineum* and *O. lusitanicum* occur sporadically in other parts of Australia and the fertile specimens have a general similarity to *O. lineare.* Both species can be distinguished from *O. lineare* by the sterile plants which consist of a normal, leaf-like tropophyll. By contrast sterile plants of *O. lineare* consist of a slender common stalk and the reduced linear tropophyll.

In Arnhem Land *O. lineare* grows in seasonally inundated sand sheets between sandstone outcrops. The Queensland collection, is recorded as growing in black loam between grass tussocks.

Northern Territory. DARWIN AND GULF DISTRICTS: Katherine Gorge National Park, 14°20′S, 132°30′E Feb 1980, *Dunlop* 5229 (DNA); Lighning Dreaming, Arnhem Land, 12°55′S, 133°02′E, Feb 1984, *Jones* 1486 (DNA, BRI); 6 km S of Mt Gilruth, Arnhem Land, 13°10′S, 133°06′E, March 1984, *Jones* 1538 (DNA).

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